

3. The carrier head of claim 1, wherein the flexible membrane is formed of a material having a high friction coefficient.

4. (Amended) The carrier head of claim 1, wherein the outer surface of the flexible membrane includes features to increase its friction coefficient.

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5. (Amended) The carrier head of claim 1, wherein the friction coefficient of the outer surface of the flexible membrane is sufficiently high that the substrate does not move relative to the membrane during polishing.

9. (Amended) A carrier head, comprising:

a retaining ring;

a pressurizable chamber; and

a flexible membrane to press a substrate against a polishing surface, the flexible membrane including an inner surface that forms a boundary of the pressurizable chamber and an outer surface having surface features to increase a friction coefficient of the outer surface, wherein the outer surface is rougher than the inner surface.

10. The carrier head of claim 9, wherein the flexible membrane is formed of a material having a high friction coefficient.

11. The carrier head of claim 9, wherein the outer surface of the flexible membrane is roughened to increase its friction coefficient.

12. (Amended) The carrier head of claim 9, wherein the friction coefficient of the flexible membrane is sufficiently high that the substrate does not move relative to the membrane.

13. The carrier head of claim 9, wherein the features are grooves.

14. The carrier head of claim 9, wherein the features are vias.

15. A method of assembling a carrier head comprising:
abrading a flexible membrane to provide the membrane with a roughened surface;
installing the flexible membrane in the carrier head in a position to apply pressure
to a substrate.

17. (Amended) The carrier head of claim [1] 4, wherein the features are
selected from grooves and vias.

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19. A carrier head, comprising:
a retaining ring;
a pressurizable chamber; and
a fluid-tight flexible membrane with an inner surface that forms a boundary of the
pressurizable chamber and an outer surface to press a substrate against a polishing
surface, wherein the outer surface is rougher than the inner surface. --